MEASO18
Marine Ecosystem Assessment of the Southern Ocean

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Eileen Hofmann is a Professor in the Department of Ocean, Earth and Atmospheric Sciences and a member of the Center for Coastal Physical Oceanography, both at Old Dominion University, Norfolk, VA. Her research interests are in the areas of physical-biological interactions in marine ecosystems, environmental control and transmission of marine diseases, descriptive physical oceanography, and mathematical modeling of marine ecosystems. She has worked in a variety of marine environments, most recently the continental shelves of the Ross Sea and the western Antarctic Peninsula, Delaware and Chesapeake Bays, and the Middle Atlantic Bight off the east coast of the United States. She has published extensively in marine ecosystem modeling and other areas of marine research and has co-edited nine special issues of journals and two books. Her contributions to modeling physical-biological interactions in marine systems were recognized by her election as 2013 Fellow of the American Geophysical Union (AGU).

From 2010-2015, she served as Chair of the Integrated Marine Biogeochemistry and Ecosystem Research (IMBER) and in this role, she oversaw the development of a new ten-year IMBER Science Plan and Implementation Strategy. Prior to IMBER she was a member of the international and U.S. science steering committees for the Global Ocean Ecosystem Dynamics (GLOBEC) program. She coordinated the U.S. and international Southern Ocean GLOBEC field program and synthesis phases and participated in the U.S. Southern Ocean GLOBEC cruises to the west Antarctic Peninsula continental shelf region. Dr. Hofmann is currently President of the Ocean Sciences section of the AGU and is a member of the AGU Council Leadership Team. She is Co-Editor-in-Chief for the Journal of Marine Systems, which provides an opportunity to learn about a wide range of marine research.

Introduction to Theme 3: Modelling

Understanding and projecting responses of marine ecosystems to changing climate conditions and direct human impacts such as fisheries requires integrated ecosystem analyses. Analyses of Southern Ocean ecosystems are no exception. Despite maintaining unique biological diversity, there has been more than two centuries of exploitation of living resources, rapid changes in ocean temperature and seasonal ice cover are ongoing, and significant changes at all trophic levels are becoming apparent. Complex interactions within food webs modify responses of individual species and influence the responses of entire ecosystems to change. Reliable projections of the impacts of past and future change on Southern Ocean ecosystems require fundamental understanding of the factors that determine the structure and function of the food webs at multiple scales and approaches for incorporating this understanding into coupled modeling frameworks. This session highlights the current status of integrated models for Southern Ocean ecosystems and considers future directions and challenges for advancing modeling of Southern Ocean ecosystems.